SUMMER 2022 – SC EPSCOR / INBRE RET PROJECT DESCRIPTION FORM

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Research Subject Area	Bioinformatics

A. Briefly describe overall research program at your laboratory:

Machine learning (ML) continues to grow in importance for many organizations across nearly all domains. Some example applications of machine learning in practice include: Predicting the likelihood of a patient returning to the hospital (readmission) within 30 days of discharge. To address each scenario, we can use a given set of features to train an algorithm and extract insights. These algorithms, or learners, can be classified according to the amount and type of supervision needed during training. The revolution brought about in biological big data analytics by artificial intelligence (AI) has the potential to identify a broader range of genetic differences and support the generation of more robust biomarkers in medicine. AI is invigorating biomarker research on various fronts, right from the cataloguing of key mutations driving the complex diseases like cancer to the elucidation of molecular networks underlying diseases.

B. Briefly describe specific project(s) for your teacher:

In this study, we briefly explore the potential of AI through machine learning approaches to propose that these methods can act as recommendation systems to sort and prioritize important genes and finally predict the presence of specific biomarkers in different cancer types like breast, lung, colon, and ovarian cancers.

C. Will any other people (post docs, grad students, undergraduate students, colleagues, etc.) be involved directly with your teacher?

Probably some undergraduate students and colleagues.